

SEQ ID Sequence ID
NO:X

34830 HCNBB75R

177536 HPMAN52R

179175 HPRAD64R



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atgcgccagg gctcgttttc actgcttatn ttcttcggga ttctgggagc caccactcta 180
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agggagcgtg caaaatttgt caaaagtggc cttttattgt aaaacgacac gagagctaatt 180
nctgcatgcc cgttgctgcc tgaatcagaa gggcaccatc ttggggctgg atctccagaa 240
ctgttctctg gaggacctg gtccaaactt tcatcaggca cataccactg ttcatcatag 300
acctgcaagc aaacc

What Is Claimed Is:

1. An isolated polynucleotide comprising at least 25 contiguous nucleotides of a polynucleotide member selected from the group consisting of:

- (a) SEQ ID NO: 92;
- (b) SEQ ID NO: 351;
- (c) SEQ ID NO: 352;
- (d) SEQ ID NO: 359;
- (e) SEQ ID NO: 359;
- (f) SEQ ID NO: 1762;
- (g) SEQ ID NO: 1832;
- (h) SEQ ID NO: 1892;
- (i) SEQ ID NO: 1945;
- (j) SEQ ID NO: 2340;
- (k) SEQ ID NO: 2341;
- (l) SEQ ID NO: 2342;
- (m) SEQ ID NO: 2343;
- (n) SEQ ID NO: 2344;
- (o) SEQ ID NO: 3103;
- (p) SEQ ID NO: 3250;
- (q) SEQ ID NO: 3271;
- (r) SEQ ID NO: 3274;
- (s) SEQ ID NO: 3282;
- (t) SEQ ID NO: 3283;
- (u) SEQ ID NO: 3287;
- (v) SEQ ID NO: 3290;

(w) SEQ ID NO: 3291;
(x) SEQ ID NO: 3294;
(y) SEQ ID NO: 3295;
(z) SEQ ID NO: 3296;
(aa) SEQ ID NO: 4202;
(ab) SEQ ID NO: 4608;
(ac) SEQ ID NO: 5934;
(ad) SEQ ID NO: 5968;
(ae) SEQ ID NO: 6110;
(af) SEQ ID NO: 6190;
(ag) SEQ ID NO: 7887;
(ah) SEQ ID NO: 7888;
(ai) SEQ ID NO: 7889;
(aj) SEQ ID NO: 8559;
(ak) SEQ ID NO: 8560;
(al) SEQ ID NO: 8561;
(am) SEQ ID NO: 9054;
(an) SEQ ID NO: 9121;
(ao) SEQ ID NO: 10323;
(ap) SEQ ID NO: 12462;
(aq) SEQ ID NO: 13763;
(ar) SEQ ID NO: 14566;
(as) SEQ ID NO: 14848;
(at) SEQ ID NO: 15932;
(au) SEQ ID NO: 16467;

(av) SEQ ID NO: 16956;
(aw) SEQ ID NO: 17059;
(ax) SEQ ID NO: 18607;
(ay) SEQ ID NO: 22724;
(az) SEQ ID NO: 24869;
(ba) SEQ ID NO: 24977;
(bb) SEQ ID NO: 25300;
(bc) SEQ ID NO: 25854;
(bd) SEQ ID NO: 30265;
(be) SEQ ID NO: 30401;
(bf) SEQ ID NO: 31056;
(bg) SEQ ID NO: 34507;
(bh) SEQ ID NO: 37701;
(bi) SEQ ID NO: 39862;
(bj) SEQ ID NO: 40701;
(bk) SEQ ID NO: 44645;
(bl) SEQ ID NO: 45027;
(bm) SEQ ID NO: 46488;
(bn) SEQ ID NO: 47054;
(bo) SEQ ID NO: 55120;
(bp) SEQ ID NO: 55158;
(bq) SEQ ID NO: 61139;
(br) SEQ ID NO: 61353;
(bs) SEQ ID NO: 62032;
(bt) SEQ ID NO: 63362;

(bu) SEQ ID NO: 63879;
(bv) SEQ ID NO: 64069;
(bw) SEQ ID NO: 64545;
(bx) SEQ ID NO: 64590;
(by) SEQ ID NO: 66188;
(bz) SEQ ID NO: 66443;
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(cb) SEQ ID NO: 67560;
(cc) SEQ ID NO: 67567;
(cd) SEQ ID NO: 72197;
(ce) SEQ ID NO: 73334;
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(ck) SEQ ID NO: 81385;
(cl) SEQ ID NO: 82030;
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(dc) SEQ ID NO: 99761;
(dd) SEQ ID NO: 99817;
(de) SEQ ID NO: 99818;
(df) SEQ ID NO: 99917;
(dg) SEQ ID NO: 100064;
(dh) SEQ ID NO: 101042;
(di) SEQ ID NO: 104503;
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(dn) SEQ ID NO: 113413;
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(dq) SEQ ID NO: 115675;
(dr) SEQ ID NO: 115677;

(ds) SEQ ID NO: 115678;
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(dw) SEQ ID NO: 120431;
(dx) SEQ ID NO: 120518;
(dy) SEQ ID NO: 122579;
(dz) SEQ ID NO: 122686;
(ea) SEQ ID NO: 123074;
(eb) SEQ ID NO: 123302;
(ec) SEQ ID NO: 124148;
(ed) SEQ ID NO: 125810;
(ee) SEQ ID NO: 126980;
(ef) SEQ ID NO: 128552;
(eg) SEQ ID NO: 130828;
(eh) SEQ ID NO: 132983;
(ei) SEQ ID NO: 140713;
(ej) SEQ ID NO: 152957;
(ek) SEQ ID NO: 152958;
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(em) SEQ ID NO: 152966;
(en) SEQ ID NO: 152972;
(eo) SEQ ID NO: 152974;
(ep) SEQ ID NO: 159075;
(eq) SEQ ID NO: 163826;

(er) SEQ ID NO: 165050;
(es) SEQ ID NO: 165051;
(et) SEQ ID NO: 165054;
(eu) SEQ ID NO: 166149;
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(ew) SEQ ID NO: 167326;
(ex) SEQ ID NO: 171867;
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(ez) SEQ ID NO: 177089;
(fa) SEQ ID NO: 177108;
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(fc) SEQ ID NO: 177892;
(fd) SEQ ID NO: 179601;
(fe) SEQ ID NO: 179617;
(ff) SEQ ID NO: 180971;
(fg) SEQ ID NO: 181434;
(fh) SEQ ID NO: 182732;
(fi) SEQ ID NO: 182807;
(fj) SEQ ID NO: 184408;
(fk) SEQ ID NO: 185599;
(fl) SEQ ID NO: 186990;
(fm) SEQ ID NO: 187337;
(fn) SEQ ID NO: 187467;
(fo) SEQ ID NO: 190273;
(fp) SEQ ID NO: 193879;

(fq) SEQ ID NO: 194802;
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(fv) SEQ ID NO: 199343;
(fw) SEQ ID NO: 203034;
(fx) SEQ ID NO: 206133;
(fy) SEQ ID NO: 208292;
(fz) SEQ ID NO: 208339;
(ga) SEQ ID NO: 209864;
(gb) SEQ ID NO: 214916;
(gc) SEQ ID NO: 215183;
(gd) SEQ ID NO: 226465;
(ge) SEQ ID NO: 227067;
(gf) SEQ ID NO: 229469;
(gg) SEQ ID NO: 231011;
(gh) SEQ ID NO: 235990;
(gi) SEQ ID NO: 236608;
(gj) SEQ ID NO: 236876;
(gk) SEQ ID NO: 237149;
(gl) SEQ ID NO: 240056;
(gm) SEQ ID NO: 242215; and

(gn) the complementary strand of (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k),
(l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af),

(ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

2. The isolated polynucleotide of Claim 1 which comprises at least 30 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

3. The isolated polynucleotide of Claim 1 which comprises at least 40 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n),

(o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

4. The isolated polynucleotide of Claim 1 which comprises at least 50 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

5. The isolated polynucleotide of Claim 1 which comprises polynucleotide (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

6. The isolated polynucleotide of Claim 1 which consists of at least 30 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

7. The isolated polynucleotide of Claim 1 which consists of at least 40 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

8. The isolated polynucleotide of Claim 1 which consists of at least 50 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff),

(fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

9. The isolated polynucleotide of Claim 1 which consists of polynucleotide (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

10. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide consists of at least 30 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee),

(ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

11. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide consists of at least 40 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

12. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide consists of at least 50 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb),

(cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

13. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide consists of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

14. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide comprises at least 30 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar),

(as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj),
(bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb),
(cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu),
(cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm),
(dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee),
(ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew),
(ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp),
(fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi),
(gj), (gk), (gl) or (gm).

15. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide comprises at least 40 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

16. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide comprises at least 50 contiguous nucleotides of polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb), (fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

17. A composition comprising the isolated polynucleotide of Claim 1 wherein said polynucleotide comprises polynucleotide member (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l), (m), (n), (o), (p), (q), (r), (s), (t), (u), (v), (w), (x), (y), (z), (aa), (ab), (ac), (ad), (ae), (af), (ag), (ah), (ai), (aj), (ak), (al), (am), (an), (ao), (ap), (aq), (ar), (as), (at), (au), (av), (aw), (ax), (ay), (az), (ba), (bb), (bc), (bd), (be), (bf), (bg), (bh), (bi), (bj), (bk), (bl), (bm), (bn), (bo), (bp), (bq), (br), (bs), (bt), (bu), (bv), (bw), (bx), (by), (bz), (ca), (cb), (cc), (cd), (ce), (cf), (cg), (ch), (ci), (cj), (ck), (cl), (cm), (cn), (co), (cp), (cq), (cr), (cs), (ct), (cu), (cv), (cw), (cx), (cy), (cz), (da), (db), (dc), (dd), (de), (df), (dg), (dh), (di), (dj), (dk), (dl), (dm), (dn), (do), (dp), (dq), (dr), (ds), (dt), (du), (dv), (dw), (dx), (dy), (dz), (ea), (eb), (ec), (ed), (ee), (ef), (eg), (eh), (ei), (ej), (ek), (el), (em), (en), (eo), (ep), (eq), (er), (es), (et), (eu), (ev), (ew), (ex), (ey), (ez), (fa), (fb),

(fc), (fd), (fe), (ff), (fg), (fh), (fi), (fj), (fk), (fl), (fm), (fn), (fo), (fp), (fq), (fr), (fs), (ft), (fu), (fv), (fw), (fx), (fy), (fz), (ga), (gb), (gc), (gd), (ge), (gf), (gg), (gh), (gi), (gj), (gk), (gl) or (gm).

18. A recombinant vector comprising the polynucleotide of Claim 1.
19. A recombinant vector comprising the polynucleotide of Claim 1 operatively associated with a regulatory sequence that controls gene expression.
20. A genetically engineered host cell comprising the polynucleotide of Claim 1.
21. A genetically engineered host cell comprising the polynucleotide of Claim 1 operatively associated with a regulatory sequence that controls gene expression.
22. The isolated polynucleotide of Claim 1 fused to a heterologous polynucleotide.
23. The isolated polynucleotide of Claim 6 fused to a heterologous polynucleotide.
24. The composition of Claim 10 wherein the polynucleotide is fused to a heterologous polynucleotide.
25. The composition of Claim 14 wherein the polynucleotide is fused to a heterologous polynucleotide.